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Future Challenges of Lithuanian Transport Sector Enterprise's Certification in the Context of Evolution of the Management Systems Certification

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Abstract

In the provided article we touch some issues of broader research in the area of management systems standardization. One of the partial objectives of our paper is to predict the evolution of management system standards (MSS) in the context of the “BIG REVISION” and its future penetration into the market worldwide. The other aim of the article is to present results of the survey among the Lithuanian transport sector enterprises which are in the process of implementation of MSS as well as to discuss their possible challenges in the future. To understand the evolution and predict future certification quantities, it is necessary to examine more deeply the behavior of individual standards on the markets. There we conclude that the scope and structure of standards markets penetration is impacted by their dependence (mutual pull-effect), type of standard (universal, sectorial MSS), “age” of standard and the number of revisions, existence of “higher” sector standard (where it is possible to skip or substitution universal standard), economic conditions of the region, business and legislative rules (external pressure to introduce standards). The research described in the paper was partially financially supported by the Slovak Grant Agency (VEGA) under grant No. 1/0336/14.

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1. Introduction

Justification of enterprises practices by the international standards and certification of the activities became a commonness of company life. International standardization allowed for all the industrial units identify and treat in common way quality parameters of their activity. According to Nematollohi et al. (2014), Godlevskaja et al. (2011) decision towards the implementation of quality management systems in particular organization may arise from its will to increase quality of the products or provided services and desire to obtain the certificate which facilitate collaboration with international customers, increase export possibilities, and enlarge satisfaction of the clients. Voluntary certification of activity in accordance to well-known international MSS standards seldom could be recognized as unenforced decision of the organization. For many companies (especially working in the field of transportation) it became a necessity in order to maintain their competitiveness and business positions in the international markets (Langvinienė, Sližienė 2012; Kaziliunas 2010). Pressure from the side of the customers and suppliers, as well as ever increasing requirements for the quality of the services, lead to the popularity of MSS standardization among the enterprises working in the field of transportation. Certification of the activity become not voluntary but rather necessary strategic decision for many transport companies in order to firm their competitive position on the international level.

ISO organization in regular ISO SURVEY 2013 (ISO, 2013) confirmed continued increase of certification of management systems. In 2013 reached the number of certificates 1.5 million worldwide, this represents 4% increase in issued certificates compared to the number of certificates in 2012 (an increase of 65 285 certificates) (Table 1).

Table 1. Number of certificates issued in 2013 (Source: International Organization for Standardization. The ISO Survey of Management System Standard Certifications).

	Number of certificates 2013	Number of certificates 2012	Evolution in %
ISO 9001	1 129 446	1 096 987	3%
ISO 14001	301 647	284 654	6%
ISO 50001	4 826	2 236	116%
ISO 27001	22 293	19 620	14%
ISO 22000	26 847	23 278	15%
ISO/TS 16949	53 723	50 071	7%
ISO 13485	25 666	22 317	15%
TOTAL	1 564 448	1 499 163	4%

Of this number 1.1 million issued certificates constitutes the certification to ISO 9001 (Quality Management System), with an annual increase of 3%. The survey confirmed the continued increase of ISO certification of environmental management systems according to the ISO 14001 standard. Previous growing trend continued in the certification to all other standards: ISO / IEC 27001 Information Security Management Systems, ISO 22001 Food Safety Management System and ISO 13485 Quality Assurance System Medical Devices (Table 1). “Youngest” of followed standards ISO 50001 grew by 116% (2 590 certificates). The continuous increase was observed also by the number of certification to ISO 16949 for the automotive industry.

The main aim of this paper is to present the evolution of MSS in the context of „BIG REVISION“ and discuss the challenges for Lithuanian transport sector enterprises in the context of given changes.

The name “MSS BIG REVISION” goes for the most up to date issue of latest version of most popular standards of ISO organization, arranged in order to meet the needs of business organizations in best manner. The main attention is paid for the undoubtedly the most popular standard ISO 9001 (see table 1). The new version of this standard (issued in the September 2015) started the wave of discussions among the scientists and practitioners across the whole Europe (Gree, Lomas, Abbassi 2014). In accordance to initial sources (www.iso.org), the new version of the standard will allow for ability of more easy integration of several standards into one common system.

2. Development of the ISO management systems standard (MSS) in the world

Globalization and the opening of international markets significantly affect the scope and structure of the certification of management systems. The aim of our research is to analyze the development of the certification to ISO MSS in terms of the potential interdependencies, the development of a geographic structure of certification and the dynamics of the individual markets. In the long term and at the global level can be reported continuous increase of issued certificates by all ISO MSS (Figure 1).

Similar trend can be observed by standard OHSAS 18001 (Occupational Health and Safety Management Systems) (Figure 2). We estimate development of certification to BS/OHSAS 18001 based on surveys OHSAS Group Project (OHSAS Project Group, 2009). In 2007 was published first revision of OHSAS 18001:2007, it caused the failure of the survey in 2008.

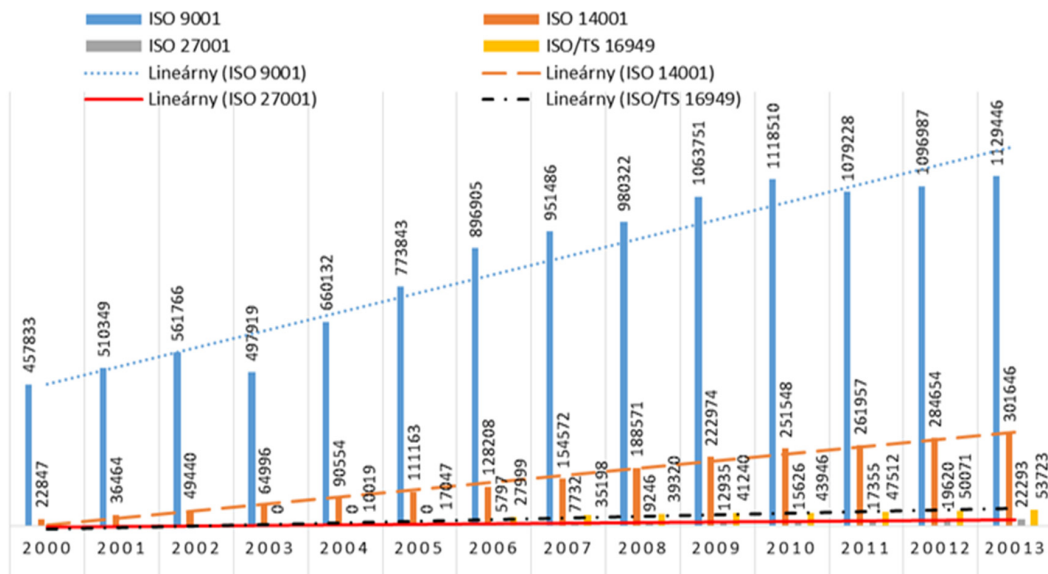


Fig. 1. Evolution of the number of issued certificates since 2000 (Source: Processed by the data in the ISO Survey 2013).

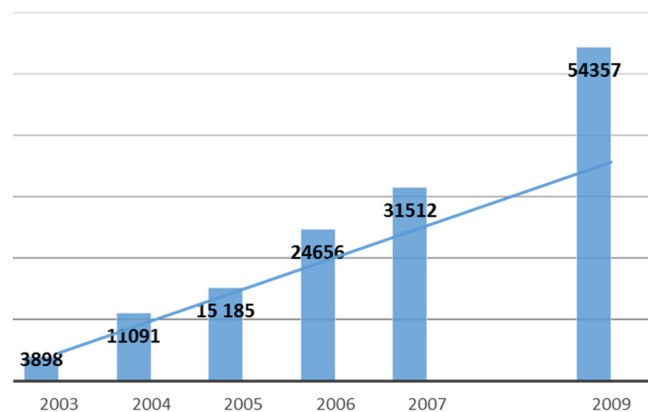


Fig. 2. Evolution of the number of issued certificates OHSAS 18001 (Source: Processed by Occupational Health and Safety (OH&S) Management Systems, Standards and Certificates Survey (OHSAS Project Group, 2009).

Despite this, significant increase in certification to OHSAS 18001 is evident across period of the survey. This argument was one of the main motives for the preparation of the first ISO standards in this area, ISO 45001. The first draft of ISO 45001 was published in May 2014.

Certification number of all standards on the global level is increasing. By the closer examination can be observed different “behavior” of the standards. One of the questions of the research is the impact of standards interdependence on the growth of certification.

After the initial analysis of the relationship between the evolution of the certification to ISO 9001 and to ISO 14001, ISO 27001, OHSAS 18001 can be assumed the strong positive correlation between ISO 14001 and ISO 9001 (Figure 3). Weaker positive correlation between certifications to ISO 9001 and certifications to ISO 27001 and also OHSAS 18001.

There is evident high positive correlation between the certification to the ISO 9001 and the certification to ISO 14001 and positive correlation between the certification to the ISO 9001 and ISO 27001 and OHSAS 18001 in the following year ($n + 1$) (Table 2).

Table 2. The correlation between the certification to MSS from 2000 to 2013.

	ISO 9001($n = \text{year}$)
ISO 14001 ($n+1$)	0,96357
ISO 27001 ($n+1$)	0,933525
ISO/TS 16949 ($n+1$)	0,926056
BS OHSAS 18001	0,994563

However, if we evaluate rate of development and dynamics of certification to different MSS (market’s capacity to absorb standard) and confirm the previous assumptions, we can observe decreasing dynamics of growth ISO 9001 in comparison to the “younger” standards (ISO 14001 and ISO 27001) (Figure 4).

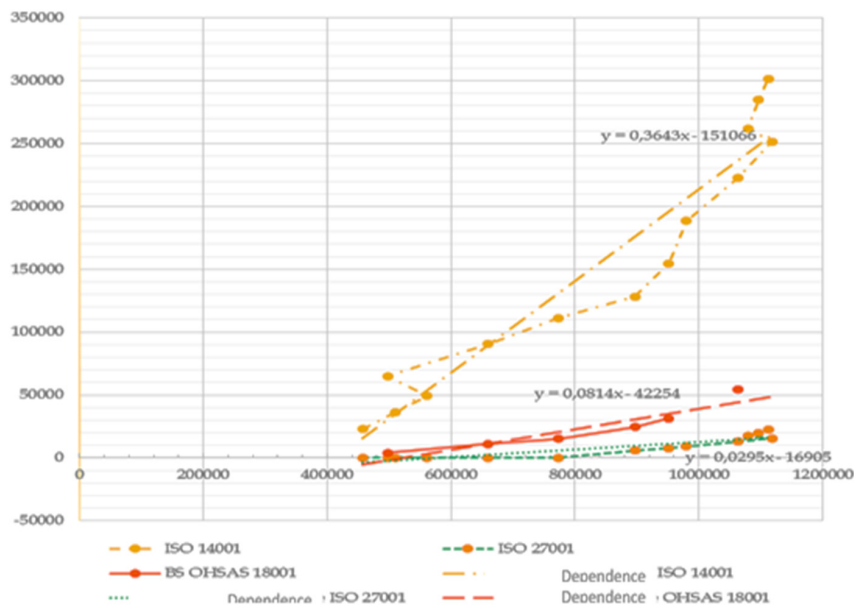


Fig. 3. Dependence of certification to ISO 9001 certification to ISO 27001, ISO 14001 and OHSAS 18001 (Source: Processed by ISO Survey, 2013).

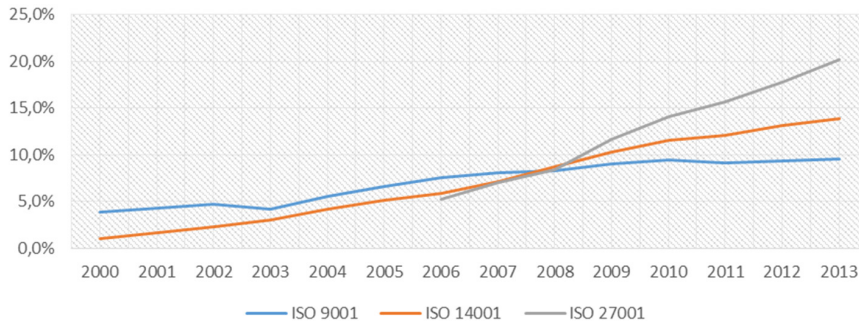


Fig. 4. The dynamics of certification to ISO 9001, ISO 14001 and ISO 27001 (Source: Processed by ISO Survey, 2013).

At the global level, we can therefore assume:

- continuous increase in certification of all MSS,
- dependence between the growth of certification of individual MSS,
- higher dynamics of younger standards.

Conclusions of the global perspective are not sufficient for understanding future development and possible prediction of certification. Even in view of the “MSS BIG REVISION” should be further examined the behavior of the standards on particular markets.

3. Certification in accordance to the most popular MSS

Certification according to ISO 9001. The first edition of ISO 9001:1987, age 27 years (4th revision). In September 2015 ISO plans to publish the expected revision of ISO 9001:2015.

ISO 9001 is growing worldwide, with the exception of 2011 (Figure 1), which due to the change of survey methodology. There was a decrease in the number of reported certification according to ISO 9001. And in 2003, after a transition period for recertification according to the revision of ISO 9001:2000. In 2013, the number of ISO 9001 certificates worldwide increased by 32459 (Figure 5).

Europe is still the “leader” when in 2013 recorded further growth by 15,815 certificates. In Europe was the largest number of certificates issued in Italy (the total number of 160,966 certificates). In 2013, Italy also recorded the largest increase by 23975 certificates.

Interesting in ISO Survey is development in East Asia. Asia records in 2013 41% share of the ISO 9001 certification worldwide. Nevertheless there was a significant decline in issued ISO 9001 certificates in East Asia compared to 2012 (–8786 certificates).



Fig. 5. The contribution of regions in the total number of certificates issued to ISO 9001 in 2013 and comparison versus 2012 (Source: Processed by ISO Survey, 2013).



Fig. 6. The contribution of regions in the total number of certificates issued to ISO 14001 in 2013 and comparison to 2012 (Source: Processed by SO Survey, 2013).

Other East Asian countries reported increase in of certification to ISO 9001 standards. China, which is the fifth largest importer into the SR reports largest number of ISO 9001 certificates per year (337,033) worldwide. China recorded increase of 3,163 certificates in 2013. In parallel there is a significant increase in the issued certificates to ISO / TS 16949, ISO 14001, ISO 13485, ISO 22000.

Certification according ISO 14001. The first edition of ISO 14001:2004 standard was in 1996, age 18 years. The second revision.

ISO 14001 initially showed a lower rate of growth (Figure 4). Currently, the importance of increasing the concepts of sustainable development. ISO 14001 certification has seen the biggest increase just in Europe in 2013 (Figure 6). In Europe dominates Italy with an increase of 5047 issued certificates compared to 2012. The leader in number of certificates issued ISO14001 China, which recorded 104 735 certificates issued in 2013, an increase of more than 13,622 certificates in 2012.

Certification according to ISO / IEC 27001. The first edition of ISO/IEC 27001 in 2005, 9 years age.

Certification to ISO/IEC 27001 records high dynamics. Its penetration grows mainly in Europe. The leader here is Italy and Great Britain in 2013. However, the global leader in certification to ISO/IEC 27001 is Asia, particularly Japan (by 7043 certificates) (Figure 7).

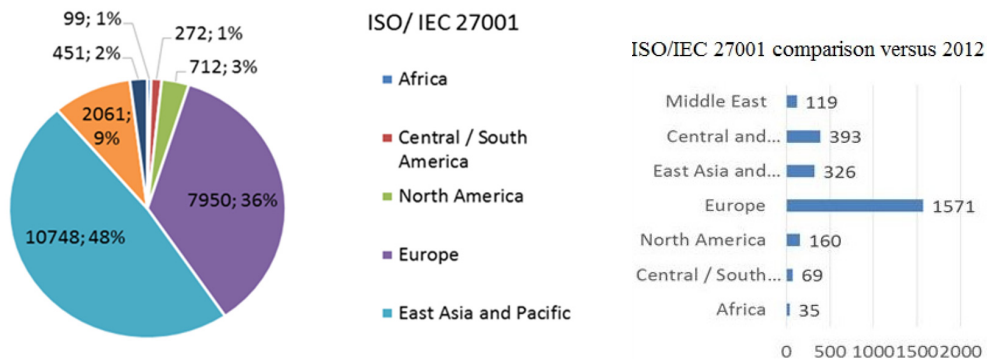


Fig. 7. Share of regions in the total number of certificates issued to ISO / IEC 27001 in 2013 and comparison versus 2012 (Source: Processed by ISO Survey, 2013).

Interesting is the rapid growth in the number of certified ISO 27001 (Information Security Management) in the very first year after its publication, with continued growth to 2013. As Figure 8 documents Europe maintains conventional trend of progressive onset of ISO / IEC 27001, according to the equation trend with faster dynamics growth than East Asia.

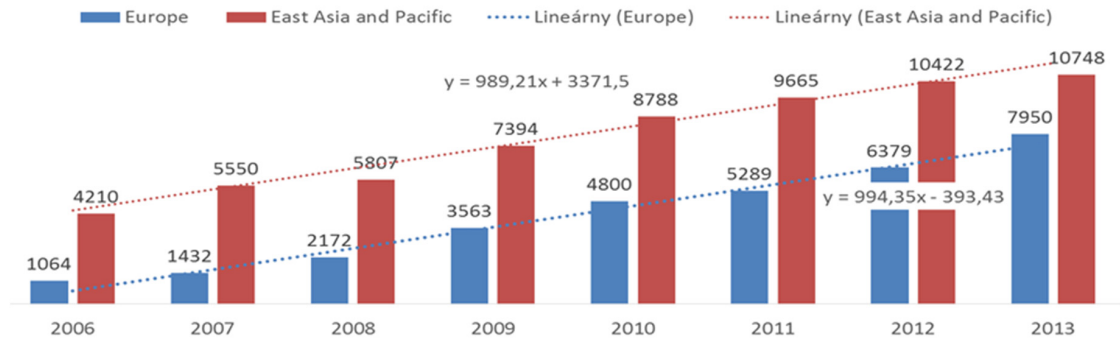


Fig. 8. Evolution of the number of certificates issued to ISO / IEC 27001 a year in Europe and East Asia (Source: Processed by ISO Survey, 2013).

4. Motives of the decision towards the certification in Lithuanian transport sector companies

In accordance to the tendency of implementation of Quality management systems, the most popular in Lithuania are systems ISO 9001 and ISO14001, see Figure 9.



Fig. 9. Evolution of the number of certificates issued to ISO 9001 (a) and ISO 14001 (b) a year in Lithuania (Source: Processed by ISO Survey, 2013).

In order to determine the most popular MSS among the Lithuanian transport sector enterprises and in order to identify main causes having effect on the decisions towards the certification, the research by I. Sprogytė and V. Vasilienė-Vasiliauskienė was conducted (Sprogytė 2015). The main aim of the mentioned above research was to identify the motives of Lithuanian transport sector companies regarding the certification of their activities. After the interview of 415 enterprises (the limit of presentable was 377 enterprises), conclusions were made that 57.9% of respondents certified their activities in accordance to ISO 9001 and 20.9% of respondents – in accordance to ISO14001. Other certification systems (ISO 27001, OHSAS 18001) were not so popular among the Lithuanian transport sector enterprises. Among the reasons which led towards the implementation of MSS in transport organizations, could be mentioned following (Figure 10): the pressure from the side of clients and suppliers and striving for bigger revenue and number of orders). Internal motives that led towards the decision of certification were: more efficient activity, harmonized processes and other reasons.

Looking at the worldwide tendencies of certification, conclusion can be drawn, that certification of the activities of transport companies (as important players in supply chains) could be treated as a guarantor for the competitive advantage. Transport services provided by Lithuanian transport companies are among the main export services in the national economy, so the tendencies of certification indicates that the most popular standards (ISO 9001 and ISO 14001) do not lose their importance.

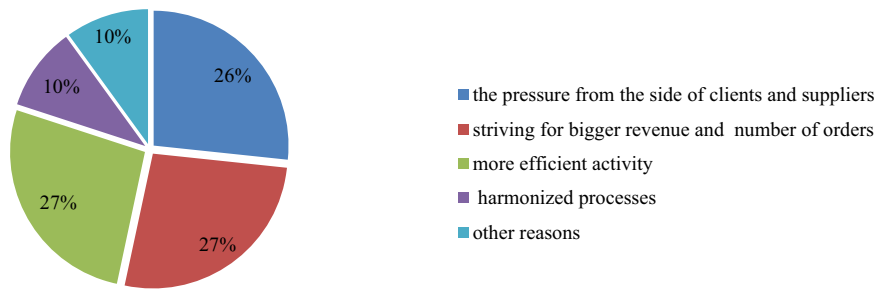


Fig. 10. Reasons to implement of MSS in Lithuanian transport organizations (Source: Sprogytė, 2015).

Decision taken by the ISO organization to foresee wider integrity (as well as to eliminate problems of compatibility) through the new versions of standards of mentioned above series in the “MSS BIG REVISION” will encourage enterprises not to restrict itself with the one and only activity standard. Arrangement of activities in accordance to the new versions will be the momentum for acquisition of competitive advantage, since the transitional period (3 years) could fate the entrenchment of the leading transport service providers in the global supply chains.

5. Conclusions

1. The article elaborates on some issues of the broader research in the field of certification of management systems standards. We focused on the development of the certification, interdependence between standards, and standards behavior in some markets. We also discussed the picture of Lithuanian transport sector in the light of activity certification trends. The main objective of the research is to predict further developments with regard to the upcoming “Big Revision” of the MSS and its penetration into the world market.
2. Knowing the fact that after the issue of new versions of the standards the development of standard complexes will be easier, we may expect that one and only certificate will not be enough to attract possible clients.
3. Transitional period of 3 years after the approval of new standards during which the enterprise will have to go through the recertification procedure, may rise resistance among the companies as well as to give possibilities to understand the importance and benefit of activity certification. This would allow for creation of competitive advantage to some companies, being the first that after complex clearing-up of activities in accordance to the new versions of the standards will gain certain confidence among the clients and suppliers.
4. After a deeper analysis of global surface within the project can be concluded that the scope and structure of MSS certification is influenced by demonstrable dependence between MSS (standard pull effect), and also by:
 - type of standard (universal, sectorial MSS),
 - “age” of standard and the number of revisions,
 - existence of “higher” sector standard (where it is possible to skip or substitution universal standard),
 - business and legislative rules (external pressure to introduce standards).

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